

REMARKS/ARGUMENTS

1.) Claim Rejections – 35 U.S.C. § 103 (a)

The Examiner has maintained the rejection of claims 1-9, 11 and 12 as being unpatentable over Vayanos, *et al.* (U.S. Patent No. 6,901,063) in view of Yun, *et al.* (U.S. Patent Publication No. 2002/0176362); and claim 10 as being unpatentable over Vayanos in view of Yun and Puuskari (U.S. Patent No. 7,330,439). The Applicants, again, traverse the rejections. For completeness, the Applicants will respond directly to the Examiner's "Response to Arguments" from the present office action, incorporating herein, as necessary, the substance of Applicants' previously-submitted arguments.

In rejecting Applicants' prior arguments as "not persuasive," the Examiner again acknowledges that Vayanos fails to teach the use of a retransmission protocol between a user equipment and a control element, but relies on its teachings solely for a retransmission protocol between a user equipment and a base station. As pointed out by Applicants' in the response to the prior office action, Yun teaches ACK and NACK signals that are managed by a radio base station (*i.e.*, a Base Transceiver Station (BTS)) or a control element connected to one or more radio base stations (*i.e.*, a Base Station Controller (BSC)). The Examiner asserts that because Yun teaches the use of ACK and NACK signals between a control element and a user equipment, and Vayanos teaches the use of ACK and NACK signals between a radio base station and a user equipment, it would be obvious to modify the teachings of Vayanos to include the further teachings of Yun. The Examiner, however, provides no basis, discernible from the prior art, to simultaneous use such mechanisms in order to reduce uplink retransmission delays.

Claim 1 recites:

1. A method of reducing impact of transmission errors by means of a retransmission protocol, utilizing a retransmission loop involving packet radio transmissions from user equipment to a control element connected to one or more radio base stations, wherein the user equipment radio transmissions are received at one or more radio base stations for forwarding to the control element, the base station acknowledging, positively or negatively, transmissions from the user equipment and the control element

acknowledging, positively or negatively, transmissions forwarded to it.

The Applicants' invention is characterized by user equipment radio transmissions that are received at one or more radio base stations for forwarding to a control element. The base station acknowledges, positively or negatively, transmissions received from the user equipment; in turn, the control element acknowledges, positively or negatively, transmissions forwarded to it from the one or more base stations. As Applicants specification discloses, the prior art teaches retransmissions between a user equipment and a Radio Network Controller (RNC) (the claimed "control element"). (page 7, line 10, *et seq.*) In order to reduce uplink retransmission delay, the Applicants invention introduces an additional layer of retransmission protocol through the use of acknowledgements between the radio base station and user equipment, in addition to the conventional acknowledgement mechanism between the user equipment and the control element. Vayanos fails to teach that combination of functions to reduce uplink retransmission delays. To overcome the acknowledged deficiencies of Vayanos, the Examiner looks to the teachings of Yun.

Referring to Paragraphs 213 and 214, the Examiner asserts that Yun teaches:

"acknowledgement of base station transmissions from a control element within a Controller (A Base Station Controller sends acknowledgement of base station transmissions from a control element within a Controller, Paragraphs 213 and 214).

To understand what Yun actually teaches, however, it is necessary to consider Paragraphs 213 and 214 in context to the preceding Paragraphs 211 and 212 and subsequent Paragraph 215:

[0211] First of all, it has to be considered where ACK and NAK commands are managed in order to apply a reverse HARQ system to a management method of the ACK and NAK commands.

[0212] Namely, it should be firstly taken into consideration that the ACK and NAK commands are managed by either a base transceiver system (hereinafter abbreviated BTS) or a base station controller (hereinafter abbreviated BSC).

[0213] If BSC controls ACK and NAK, all BTSs in an active set comes into transmission of the demodulated packets to ESC. Therefore, BSC generates an ACK signal if there exists at least one good packet or a NAK signal if all the packets transmitted from BTS are bad, so as to transmit such signals to all BTSs in the active set.

[0214] Then, all BTSs begin to transmit the same ACK or NAK signals to a terminal. If such a system is used, the terminal enables to carry out a soft combining on the ACK and NAK signals so as to increase the reliance for the ACK and NAK signals. Unfortunately, a performance delay time of HARQ increases as well.

[0215] Instead, if BTS directly handles the ACK and NAK signals, there occurs no delay problem between BSC and BTS. Yet, all BTSs in the active set may generate ACK or NAK signals which are different respectively, whereby the terminal is unable to apply the soft combining to these signals.

(emphasis added)

From the full teachings of Yun, it is apparent that it teaches ACK and NACK signals that are managed by a radio base station (*i.e.*, a Base Transceiver Station (BTS)) or a control element connected to one or more radio base stations (*i.e.*, a Base Station Controller (BSC)). Yun fails, however, to disclose a method characterized by the use of acknowledgements between the radio base station and user equipment, in addition to the conventional acknowledgement mechanism between the user equipment and the control element.

The Examiner has not pointed to a teaching or suggestion in either reference, or established a basis for why one of ordinary skill in the art would recognize that by combining the retransmission mechanisms between both the user equipment and base station, and user equipment and control element, uplink retransmission delays would be reduced. All invention are, *necessarily*, combinations of elements known in the prior art; only God works from scratch. But to render a novel solution to a problem unpatentable, it must be established why one of ordinary skill in the art would elect to combine the knowledge of the prior art to arrive at the claimed invention. In this case, the Examiner has not established why one of ordinary skill in the art would do so and, therefore, has not established a *prima facie* case of obviousness of claim 1. Furthermore, whereas

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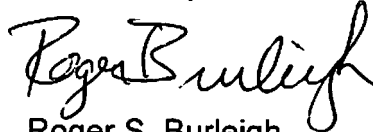
claims 2-12 are dependent from claim 1, and include the limitations thereof, they are also not obvious over Vayanos in view of Yun or further in view of Puuskari.

CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-12.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Roger S. Burleigh", written in a cursive style.

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